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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 3, 2017/2018

### **BKC3034 – BUSINESS SYSTEMS ANALYSIS AND DESIGN** (All Sections / Groups)

4 JUNE 2018  
9:00 a.m. – 11:00 a.m.  
(2 Hours)

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#### INSTRUCTION TO STUDENTS

1. This paper consists of 5 pages with **TWO** sections only.
2. Answer **ALL** questions in Section A and Section B. The distribution of the marks for each question is given.
3. Please write all your answers in the answer script provided.

## SECTION A: CASE STUDY

### Answer ALL questions.

#### **Tropical Fish Tales: Netting the Right System**

Robert Holmes wasn't exactly sure how to proceed with his project. He had six proposals from software vendors to develop an Internet-based ordering system for his company, Tropic Fish Tales. He and his project team had to figure out some way to make a meaningful comparison among the proposals to determine which alternative best fit the needs of the company. Then he had to make a presentation of his analysis and recommendations.

The problem was that none of the six proposals was the same. He and his team had spent a tremendous amount of time developing a request for proposal (RFP) that they had sent to several firms providing custom solutions. They had worked hard on the RFP to make sure that it contained a very precise definition of business requirements. Even with this well-designed RFP, none of the six proposals looked the same. He was going to have to devise a method to do a fair comparison among the proposals. Otherwise, how would he know which solution was the best for Tropic Fish Tales?

His company had made an early decision to develop an RFP and obtain outside assistance with the development. The project appeared to be pretty large, and the information system staff was quite small and inexperienced. The least-expensive solution was from a company that had a standard off-the-shelf ordering system. The advantage was that it would be quick and fairly inexpensive to install and get working. However, the disadvantage was that it did not quite fit all of the requirements. Robert wasn't sure how important the missing functionality was to his company. The system could be made to work with some modifications to work procedures and forms.

At the other end of the spectrum was a proposal for a completely new state-of-the-art system for Internet sales, with electronic interfaces to suppliers and shippers. This system was a complete electronic commerce solution with fully automated support. The proposal also indicated that substantial transaction, customer, and order history information would be retained and available in real time. The system also contained automated inventory management functions. Although the system had more capability than the company really needed, it would certainly bring Tropic Fish Tales to the forefront of high-technology solutions. Robert wondered whether the company could afford the price, however, which was about three times the cost of the low-cost solution.

The other proposals ranged between the two extremes. One company proposed to develop a system from the ground up, working very closely with Robert's firm to ensure that the system fit the requirements perfectly. Another company had a base system that it proposed to modify. The base system was for a different industry and was not currently Internet based, so substantial modifications would be necessary. One solution ran only on UNIX machines. Even though the system appeared to have most of

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the desired functionality, it would take some work to modify it for a Windows server network, which is the current environment for the company.

Robert was scheduled to meet Bill Williams, the director of information systems, later in the day. He hoped Bill would have some suggestions about how to address this problem.

**Source:** J. Satzinger, R. Jackson, & S. Burd, *Systems Analysis & Design in a Changing World*, 5<sup>th</sup> ed., 2010.

### **QUESTION 1**

a. Based on the case study, which core process of the system development life cycle is Robert and his team on at this point of time? (2 marks)

b. Assume that Robert and Bill were able to create matrices that measure relative strengths among the proposals, comment on the applicability of doing an evaluation based strictly on the numbers.

In your opinion, is it possible to make a decision based solely on the numbers? Justify your answer.

(6 marks)

c. Since there are a number of potential vendors to choose from, Robert and Bill would need to employ certain methods to make their decision. Briefly describe **TWO (2)** methods for vendor selection.

(4 marks)

d. What does it mean by "develop a system from the grounds up"? Briefly describe this method and include **ONE (1)** advantage and **ONE (1)** disadvantage. (10 marks)

e. Assuming that Robert decided to select the system with the new state-of-the-art system for Internet sales, Robert would still need to evaluate the technological risks and feasibility, and the cost-benefit analysis. Justify why there is a need to conduct these two analysis.

(8 marks)

(Total: 30 marks)

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**SECTION B: ESSAYS****Answer ALL questions.****QUESTION 2**

- a. Assume that your junior in college has just started learning about system analysis and development. He is confused between what is considered as an *approach to system development life cycle*, and an *approach to software construction*. Briefly describe the differences between these two concepts. (4 marks)
  
- b. In identifying use cases, one of the techniques commonly used is the *event decomposition technique*. Discuss this technique. (10 marks)
  
- c. One effective method of software design is to separate the user-interface routines from the business logic routines and separate the business logic routines from the database access routines. This method of designing the application software is called *three-layer architecture*. Describe the components in the three-layer architecture. (6 marks)

(Total: 20 marks)

**QUESTION 3**

- a. Before implementing integrity controls to prevent fraud, analyst need to understand the *fraud triangle*. Describe this concept. (8 marks)
  
- b. List and briefly describe the **FOUR (4)** activities of Core Process 5: Build, test, and integrate system components, i.e. Implementation activities. (8 marks)
  
- c. Briefly describe any **TWO (2)** types of software component that are part of add-ons and application program interfaces (APIs). (4 marks)

(Total: 20 marks)

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**QUESTION 4**

a. Read the narrative below of a partial process:

JR owns and operates Freeze!, Inc., a company specializing in freeze-drying flowers from client's memorable events, such as proms and weddings. The company not only freezes the flowers, but also presents them in a variety of display packages. Each of these packages includes materials such as glass and frames that Freeze! purchases from local suppliers. In addition to supplies for display, the company purchases office supplies and packaging materials from several vendors.

Freeze! uses a low-end accounting software package to prepare documents and reports. As employees note a need for supplies and materials, they send an order form to JR. JR then enters order information into the accounting system and creates a purchase order. She reviews and confirms the purchase order on screen before sending it to the supplier. The purchase order is then filed in the purchase order file. The original order form from employees are filed as well. When the supplier sends in the materials, they attach as well the invoice for the materials. JR checks the invoice received against the copy of the purchase order on the screen and enters the new inventory into the computer system. The invoice is then filed.

JR pays bills twice each month, on the first and fifteenth. She checks the computer system for invoices outstanding, and verifies that the goods have been received. JR then prepares the checks based on the outstanding amounts from the invoices. The checks are mailed to the suppliers then.

Develop a logical level-0 DFD for the above process.

(10 marks)

b. Read the narrative below for processing an order:

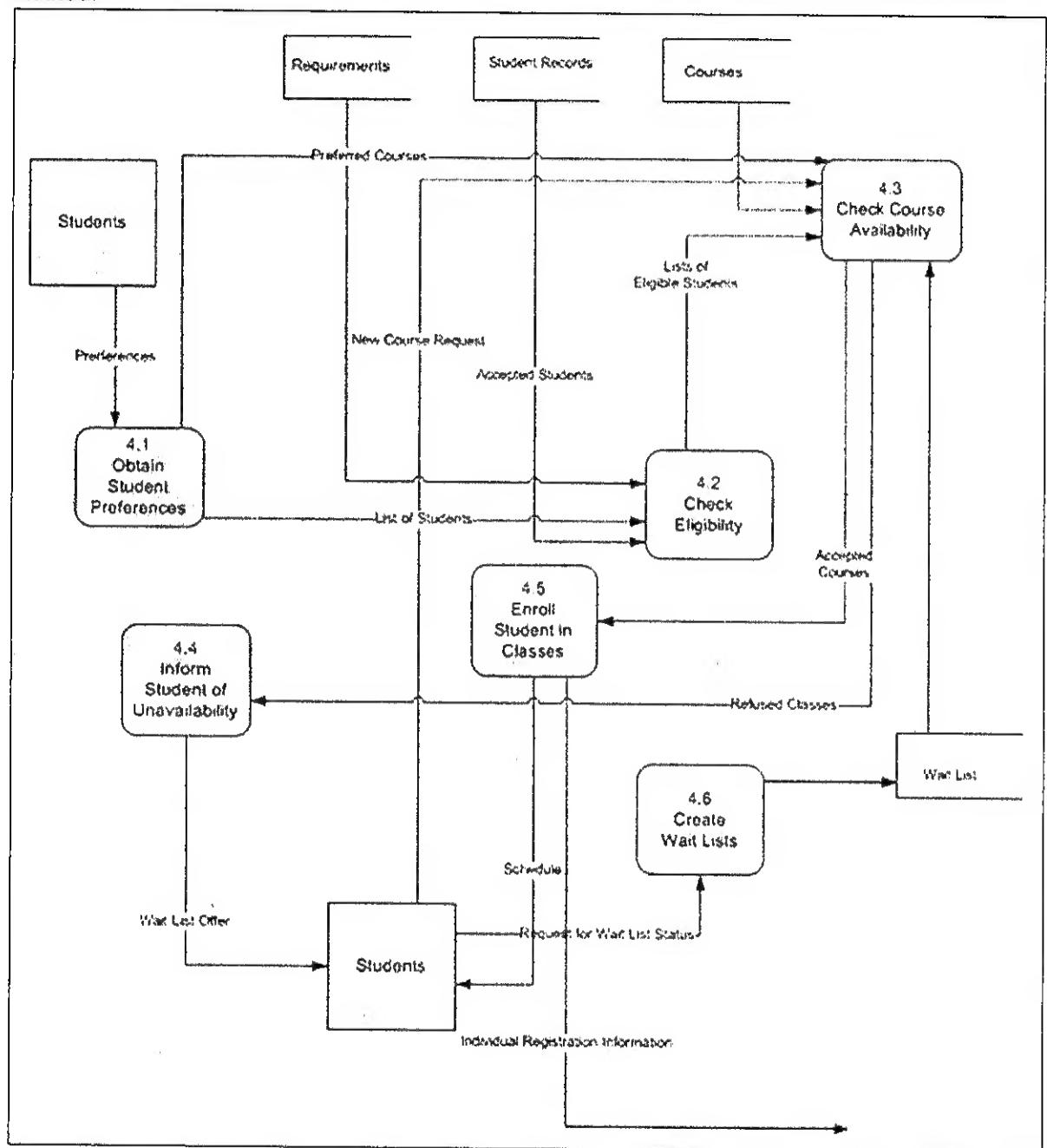
Once an order has been finalized, four parties are involved in processing it: Online Sales, Accounting, Shipping, and Printing. Online Sales sends the order to Printing, where the associated PDF file is inspected. If the file is not suitable, a new file is requested from the customer. Once the file is suitable, Accounting is informed to charge the credit card. While this is done, Printing carries out the actual printing, and sends the result to Shipping. When Shipping has both received the printed products and confirmation from Accounting that payment was successful, the products are shipped to the customer.

Develop an activity diagram for the processes described above.

(10 marks)

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c. Based on the expanded view of the data flow diagram for the module *Register Course* as depicted below, create a **first-draft structure chart** using the *transform analysis* method.



(10 marks)

(Total: 30 marks)

End of paper